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Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Navy									DATE: February 2010		
APPROPRIATION/BUDGET ACTIVITY 1319: Research, Development, Test & Evaluation, Navy BA 7: Operational Systems Development				R-1 ITEM NOMENCLATURE PE 0305220N: RQ-4 UAV							
COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	0.000	439.010	529.250	0.000	529.250	540.992	695.924	224.156	122.169	Continuing	Continuing
4020: BAMS UAS	0.000	439.010	529.250	0.000	529.250	540.992	695.924	224.156	122.169	Continuing	Continuing

A. Mission Description and Budget Item Justification

RQ-4 Broad Area Maritime Surveillance (BAMS) Unmanned Aircraft System (UAS)

The BAMS RQ-4 is a High Altitude-Long Endurance Unmanned Aircraft System designed to provide Fleet and Combatant Commanders with persistent maritime Intelligence, Surveillance and Reconnaissance (ISR) of nearly all the world's high-density sea-lanes, littorals, and areas of national interest. Envisioned as an unmanned adjunct to the P-8A Multi-Mission Maritime Aircraft (MMA), and crucial to the recapitalization of Navy's airborne maritime ISR capability, the system will seek to leverage Maritime Patrol and Reconnaissance Force (MPRF) manpower, training and maintenance efficiencies.

The RQ-4 air vehicle is based on Northrop Grumman's Block 20 Global Hawk and features sensors designed to provide near worldwide coverage through a network of five CONUS and OCONUS orbits, with sufficient air vehicles to remain airborne for 24 hours a day, 7 days a week, out to ranges of 2000 nautical miles. Onboard sensors will provide detection, classification, tracking and identification of maritime targets and include maritime radar, electro-optical/infrared (EO/IR), and Electronic Support Measures (ESM) systems. Additionally, the RQ-4 will have a communications relay capability designed to link dispersed forces in the theater of operations and serve as a node in the Navy's FORCEnet strategy. Tactical-level data analysis will occur in real-time at shore-based Mission Control sites connected to the air vehicle via satellite communications. Further intelligence exploitation can be conducted at Fleet shore-based sites or aboard Aircraft Carriers and other ships in the sea base.

RQ-4 will play a significant role in the Sea Shield and FORCEnet pillars of Sea Power 21. In its Sea Shield role, the system will rely on its key attribute of persistence to provide the supported COCOM or Fleet Commander with unparalleled situational awareness of the maritime battle space as it develops and sustains the Common Operational Tactical Picture (COTP). The system will also serve as a Fleet Response Plan enabler, while acting as a trip wire for Intelligence Preparation of the Environment (IPE). Additionally, BAMS UAS will be a FORCEnet enabler and relay platform, directly connected to both the Global Information Grid (GiG) and the DCGS-N Information Backbone (DIB).

Prior to FY10, BAMS was budgeted for in PE 0305205N.

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APPROPRIATION/BUDGET ACTIVITY		R-1 ITEM NOMENCLATURE			
1319: Research, Development, Test & Evaluation, Navy		PE 0305220N: RQ-4 UAV			
BA 7: Operational Systems Development					
B. Program Change Summary (\$ in Millions)					
	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Previous President's Budget	0.000	465.839	0.000	0.000	0.000
Current President's Budget	0.000	439.010	529.250	0.000	529.250
Total Adjustments	0.000	-26.829	529.250	0.000	529.250
• Congressional General Reductions		-1.829			
• Congressional Directed Reductions		-25.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Program Adjustments	0.000	0.000	529.250	0.000	529.250
Change Summary Explanation					
Technical: Not applicable.					
Schedule: System Functional Review moved from 4Q to 3Q FY09.					
FY11 from previous President's Budget is shown as zero because no FY11-15 data was presented in President's Budget 2010.					

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Navy								DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0305220N: <i>RQ-4 UAV</i>				PROJECT 4020: <i>BAMS UAS</i>			
COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
4020: <i>BAMS UAS</i>	0.000	439.010	529.250	0.000	529.250	540.992	695.924	224.156	122.169	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		
A. Mission Description and Budget Item Justification <p>RQ-4 is a High Altitude-Long Endurance Unmanned Aircraft System designed to provide Fleet and Combatant Commanders with persistent maritime Intelligence, Surveillance and Reconnaissance (ISR) of nearly all the world's high-density sea-lanes, littorals, and areas of national interest. Envisioned as an unmanned adjunct to the P-8A Multi-Mission Maritime Aircraft (MMA), and crucial to the recapitalization of Navy's airborne maritime ISR capability, the system will seek to leverage Maritime Patrol and Reconnaissance Force (MPRF) manpower, training and maintenance efficiencies.</p> <p>The RQ-4 air vehicle is based on Northrop Grumman's Block 20 Global Hawk and features sensors designed to provide near worldwide coverage through a network of five CONUS and OCONUS orbits, with sufficient air vehicles to remain airborne for 24 hours a day, 7 days a week, out to ranges of 2000 nautical miles. Onboard sensors will provide detection, classification, tracking and identification of maritime targets and include maritime radar, electro-optical/infrared (EO/IR), and Electronic Support Measures (ESM) systems. Additionally, BAMS will have a communications relay capability designed to link dispersed forces in the theater of operations and serve as a node in the Navy's FORCEnet strategy. Tactical-level data analysis will occur in real-time at shore-based Mission Control sites connected to the air vehicle via satellite communications. Further intelligence exploitation can be conducted at Fleet shore-based sites or aboard Aircraft Carriers and other ships in the sea base.</p> <p>RQ-4 will play a significant role in the Sea Shield and FORCEnet pillars of Sea Power 21. In its Sea Shield role, the system will rely on its key attribute of persistence to provide the supported COCOM or Fleet Commander with unparalleled situational awareness of the maritime battle space as it develops and sustains the Common Operational Tactical Picture (COTP). The system will also serve as a Fleet Response Plan enabler, while acting as a trip wire for Intelligence Preparation of the Environment (IPE). Additionally, RQ-4 will be a FORCEnet enabler and relay platform, directly connected to both the Global Information Grid (GiG) and the DCGS-N Information Backbone (DIB).</p> <p>The RQ-4 system is an evolutionary based acquisition, using an incremental development approach. Two Mission Need Statements (MNSs) support the requirement; 1) BAMS and Littoral Armed ISR MNS, and 2) Long Endurance, Reconnaissance, Surveillance and Target Acquisition (RSTA) Capability MNS. The BAMS UAS Capability Development Document (CDD) was approved May 2007 by the Joint Requirements Oversight Council (JROC).</p> <p>Prior to FY10, BAMS was budgeted for in PE 0305205N: Endurance Unmanned Aer Veh.</p>											

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Navy				DATE: February 2010		
APPROPRIATION/BUDGET ACTIVITY 1319: Research, Development, Test & Evaluation, Navy BA 7: Operational Systems Development		R-1 ITEM NOMENCLATURE PE 0305220N: RQ-4 UAV		PROJECT 4020: BAMS UAS		
B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Product Development Awarded contract in FY08 to initiate the Engineering and Manufacturing Development (EMD) phase effort. The Prime Contractor is responsible for overall system development and performance, as well as associated management, engineering and logistics activities. FY 2010 Plans: Continue EMD, including Government engineering support related to EMD. FY 2011 Base Plans: Continue EMD, including Government engineering support related to EMD.		0.000	414.991	499.042	0.000	499.042
ILS, Support, Studies & Analysis Integrated Logistics Support, Studies and Analysis. FY 2010 Plans: Continue integrated logistics support, technical engineering services, sensor risk reduction, logistics supportability analyses and environmental planning, modeling and simulation, development of manpower and basing assessments, and development of technical data to support fielding of the BAMS UAS capabilities. FY 2011 Base Plans: Continue integrated logistics support, technical engineering services, sensor risk reduction, logistics supportability analyses and environmental planning, modeling and simulation, development of manpower and basing assessments, and development of technical data to support fielding of the BAMS UAS capabilities.		0.000	11.928	12.625	0.000	12.625
Program Management		0.000	5.434	6.600	0.000	6.600

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B. Accomplishments/Planned Program (\$ in Millions)					
	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Program Management Support and travel. FY 2010 Plans: Continue the following: Program Management Support and travel; development of milestone and acquisition-related documentation; capability refinement and open systems architecture development; resource justification; affordability assessments and cost analyses; risk reduction and risk management; system integration and interoperability planning; technology maturity reviews; program protection planning; corrosion prevention planning; and Joint and International Cooperation efforts. FY 2011 Base Plans: Continue the following: Program Management Support and travel; development of milestone and acquisition-related documentation; capability refinement and open systems architecture development; resource justification; affordability assessments and cost analyses; risk reduction and risk management; system integration and interoperability planning; technology maturity reviews; program protection planning; corrosion prevention planning; and Joint and International Cooperation efforts.					
Test & Evaluation Test and Evaluation efforts. FY 2010 Plans: Continue test and evaluation support activities to allow test and fielding of the BAMS UAS. FY 2011 Base Plans: Continue test and evaluation support activities to allow test and fielding of the BAMS UAS.	0.000	6.657	10.983	0.000	10.983
Accomplishments/Planned Programs Subtotals	0.000	439.010	529.250	0.000	529.250

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C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• RDTE/0305205N: BAMS UAS	420.405	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	588.909
• APN-4/044200: RQ-4 UAV (BAMS UAV)	0.000	0.000	0.000	0.000	0.000	0.000	48.264	583.068	601.030	8,756.248	9,988.610
• APN-6/060510: BAMS UAV	0.000	0.000	0.000	0.000	0.000	0.000	0.000	29.599	90.584	1,273.845	1,394.028
• MILCON/0816376N: BAMS UAS Operator Training Facility	0.000	0.000	42.211	0.000	42.211	0.000	0.000	0.000	0.000	0.000	42.211
• MILCON/0815976N: Broad Area Maritime Surveillance T&E Facility	0.000	0.000	0.000	0.000	0.000	2.285	0.000	57.686	54.280	251.864	366.115
D. Acquisition Strategy											
The BAMS UAS is an evolutionary-based acquisition, using an incremental development approach. During the pre-Milestone B phase, the program performed technical risk reduction through studies and demonstrations, Engineering and Manufacturing Development (EMD) contract preparation, and Milestone B documentation development activities. Milestone B occurred on 8 April 2008 and EMD award occurred on 22 April 2008. The EMD contract was based on a competitive selection process for a Prime Contractor.											
The BAMS UAS program office is pursuing joint efficiency with the Air Force on the Global Hawk UAS. However, the integration of the BAMS UAS into the Maritime Patrol Reconnaissance Force (MPRF) and the unique maritime sensors employed dictate a Navy-led acquisition program focused on joint efficiencies, where possible.											
E. Performance Metrics											
Successfully achieve Critical Design Review, Flight Readiness Review, Milestone C, Integrated Test, and Operational Evaluation.											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Navy										DATE: February 2010	
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Product Development (\$ in Millions)

				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development	C/CPAF	Northrop Grumman Bethpage, NY	0.000	380.843	Nov 2009	459.063	Nov 2010	0.000		459.063	1,343.238	2,183.144	2,183.144
Systems Engineering	WR	Various Various	0.000	26.060	Nov 2009	30.200	Nov 2010	0.000		30.200	95.794	152.054	Continuing
Award Fees	C/CPAF	Northrop Grumman Bethpage, NY	0.000	8.088	Dec 2010	9.779	Dec 2011	0.000		9.779	38.616	56.483	56.483
Subtotal			0.000	414.991		499.042		0.000		499.042	1,477.648	2,391.681	2,239.627

Remarks

Support (\$ in Millions)

				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Development Support	Various/ Various	Various Various	0.000	6.325	Nov 2009	6.425	Nov 2010	0.000		6.425	39.193	51.943	Continuing
Integrated Logistics Support	WR	Various Various	0.000	4.835	Nov 2009	6.200	Nov 2010	0.000		6.200	27.878	38.913	Continuing
Studies & Analyses	Various/ Various	Various Various	0.000	0.768	Nov 2009	0.000		0.000		0.000	0.000	0.768	Continuing
Subtotal			0.000	11.928		12.625		0.000		12.625	67.071	91.624	

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Support (\$ in Millions)													
				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Remarks Prior to FY10, BAMS was budgeted for in PE 0305205N: Endurance Unmanned Aer Veh													
Test and Evaluation (\$ in Millions)													
				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	Various/ Various	Various Various	0.000	6.657	Nov 2009	10.983	Nov 2010	0.000		10.983	70.897	88.537	Continuing
Operational Test & Evaluation	Various/ Various	Not Specified Not Specified	0.000	0.000		0.000		0.000		0.000	22.949	22.949	Continuing
Subtotal			0.000	6.657		10.983		0.000		10.983	93.846	111.486	
Remarks													

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 Management Services (\$ in Millions)													
				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Contractor Engineering Support	C/CPFF	Mitre McLean, VA	0.000	0.514	Nov 2009	1.600	Nov 2010	0.000		1.600	5.073	7.187	7.187
Program Management Support	Various/ Various	Various Various	0.000	4.598	Nov 2009	4.700	Nov 2010	0.000		4.700	14.897	24.195	Continuing
Travel	WR	Various Various	0.000	0.322	Nov 2009	0.300	Nov 2010	0.000		0.300	1.296	1.918	Continuing
Subtotal			0.000	5.434		6.600		0.000		6.600	21.266	33.300	7.187
Remarks Travel funding vehicle type is TO.													
			Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			0.000	439.010		529.250		0.000		529.250	1,659.831	2,628.091	2,246.814
Remarks Prior to FY10, BAMS was budgeted for in PE 0305205N: Endurance Unmanned Aer Veh.													

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Exhibit R-4, RDT&E Schedule Profile: PB 2011 Navy																	DATE: February 2010											
APPROPRIATION/BUDGET ACTIVITY 1319: Research, Development, Test & Evaluation, Navy BA 7: Operational Systems Development									R-1 ITEM NOMENCLATURE PE 0305220N: RQ-4 UAV									PROJECT 4020: BAMS UAS										
Fiscal Year	2009				2010				2011				2012				2013				2014				2015			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Acquisition Milestones																			MS C									
Contracting Activities	Note: In FY09 and prior, BAMS was in PE 0305205N.																		LRIP 1 CA									
																				LRIP 2 CA								
System Engineering Activities		SRR		SFR		PDR			CDR				FRR															
Test & Evaluation Activities	Acronyms: CA: Contract Award CDR: Critical Design Review CT: Combined Testing DT: Developmental Testing FRR: Flight Readiness Review LRIP: Low Rate Initial Production OPEVAL: Operational Evaluation OT: Operational Testing PDR: Preliminary Design Review SFR: System Functional Review SRR: System Requirements Review																											
Production Deliveries																												

Note: In FY09 and prior, BAMS was in PE 0305205N.

Acronyms:
 CA: Contract Award
 CDR: Critical Design Review
 CT: Combined Testing
 DT: Developmental Testing
 FRR: Flight Readiness Review
 LRIP: Low Rate Initial Production
 OPEVAL: Operational Evaluation
 OT: Operational Testing
 PDR: Preliminary Design Review
 SFR: System Functional Review
 SRR: System Requirements Review

Integrated Test CT/DT/OT

OPEVAL

OT&R

SDO Deliveries

LRIP 1 Deliveries

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Exhibit R-4A, RDT&E Schedule Details: PB 2011 Navy			DATE: February 2010
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Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
System Readiness Review (SRR)	2	2009	2	2009
System Functional Review (SFR)	3	2009	3	2009
Preliminary Design Review (PDR)	2	2010	2	2010
Critical Design Review (CDR)	2	2011	2	2011
Flight Readiness Review (FRR)	2	2012	2	2012
SDD Engineering Development Model (EDM) Delivery	3	2012	4	2012
Integrated Test CT/DT/OT	2	2012	4	2014
Milestone C (MS-C)	3	2013	3	2013
Low Rate Initial Production 1 (LRIP 1) CA	3	2013	3	2013
Low Rate Initial Production 2 (LRIP 2) CA	3	2014	3	2014
Low Rate Initial Production 1 (LRIP 1) Delivery	4	2014	2	2015
Operational Test Readiness Review (OTRR)	1	2015	1	2015
OPEVAL	2	2015	3	2015

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